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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,874	06/29/2001	Hideki Kobayashi	210679US2SRD	9679
22850	7590	07/19/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			SHARON, AYAL I	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/893,874	KOBAYASHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ayal I. Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 May 2005.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-4,9-13,18-24 and 29-32 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 20-21 and 31-32 is/are allowed.  
 6) Claim(s) 1-4,9-13,18,19,22-24,29 and 30 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 29 June 2001 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/16/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |



## **DETAILED ACTION**

### ***Introduction***

1. Claims 1-4, 9-13, 18-24, and 29-32 of U.S. Application 09/893,874, originally filed on 6/29/2001 are presented for examination. This application claims priority to Japanese application 2000-197803, filed on 6/30/2000. Claims 5-8, 14-17 and 25-28 have been cancelled. Claims 1-4, 9-11, 13, 18-19, 22-24, and 30 have been amended.

### ***Allowable Subject Matter***

2. Claim 20-21 and 31-32 were allowed in the previous Office Action. The cited prior art does not expressly teach the formulas taught in these claims. The cited prior art also does not expressly teach the “recovery rate” of claims 20 and 31, or the “triangular distribution” of claims 21 and 32. Claims 31-32 are computer program claims reciting the equivalent limitations as are recited in method Claims 20-21.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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4. Claims 1-4, 9-13, 18-19, 22-24 and 29-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
5. For example, independent claims 1 and 10 have been amended to include the following limitations:
  - a display device ... configured to draw lines selectively between the first objects and between the second objects;
  - a modeling device configured to ... selecting the lines to associate between the first objects and between the second objects for reusing or recycling the first objects and the second objects.
6. The Applicants have stated the support for these amendments are based on the disclosure in pages 16, 19, and 21-22 of the specification (see the Amendment filed 5/16/05, p.18, footnote).
7. Page 22 of the specification expressly teaches that direct user input draws the line between the first and second objects, and direct user input specifies the association for reuse of parts or association for material recycling.
8. The currently amended claims are phased in a manner that, when broadly interpreted, cover automatic devices that do not require any direct user input. However, the specification is not enabled for such devices.
9. Claims 2-4 and 9 depend from claim 1, and therefore inherit this defect.
10. In addition, Claims 11-13, 18-19, 22-24 and 29-30 are rejected based on the same reasoning as claims 1-4 and 9-10. Claims 11-13 and 18-19 are method

claims that recite equivalent limitations to those recited in apparatus claims 1-4 and 9-10. Claims 22-24 and 29-30 are computer program claims that recite equivalent limitations to those recited in apparatus claims 1-4 and 9-10.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The prior art used for these rejections is as follows:

13. Zhou, Mengchu et al., "Evaluation of Environmentally Conscious Product Designs". 1998 IEEE Int'l Conf. on Systems, Man, and Cybernetics. Oct. 1998. vol.4, pp.4057-4061. (Henceforth referred to as "**Zhou**").

14. Anderi, R. et al. "Design for Environment - A Computer-Based Cooperative Method to Consider the Entire Life Cycle." Proc. EcoDesign '99: 1<sup>st</sup> Int'l Symposium on Environmentally Conscious Design and Inverse Manuf. Feb. 1999. pp.380-385. (Henceforth referred to as "**Anderi**").

15. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

**16. Claims 1-4, 9, 11-13, 18, 22-24, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou in view of Anderi.**

17. In regards to Claim 1, Zhou teaches the following limitations:

Claim 1 (Currently Amended): An environmental impact estimation apparatus comprising:

a storage device configured to store information concerning a plurality of first objects and a plurality of second objects; and

(See Zhou, especially: Fig.2 and related text)

a modeling device configured to perform life cycle modeling to generate a life cycle model, the life cycle modeling including reading the information concerning the first objects and the second objects from the storage device, and selecting the lines to associate between the first objects and between the second objects for reusing or recycling the first objects and the second objects.

(See Zhou, especially: Tables 3 and 4, and associated text)

Zhou, while teaching the use of lines to associate between related objects (see Fig.2 "Connection Graph", and associated text), does not expressly teach the selective display of the lines between the first and second objects:

a display device configured to display selectively the first objects and the second objects based on the information stored in the storage device and configured to draw lines selectively between the first objects and between the second objects;

Anderi, on the other hand, expressly teaches the use of a prototype that "... integrates already existing tools of product design, like 3D-CAD, as well as already developed tools, e.g. the evaluation system." (Anderi, p.380, col.2, para.2; and also Fig.7). Anderi also teaches that "Data about the product under design, like geometry, construction structure or material, is supplied directly by the CAD-system which will be always a central tool of a design environment."

Examiner finds that the Anderi's "CAD-system construction structure data" corresponds to Zhou's "Connection Graph" (see Zhou, Fig.2), and reads upon the claimed limitations.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhou with those of Anderi,

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because Zhou expressly teaches (see p.4061, Section 6 "Future Work", last paragraph) that: "Finally, we need to develop a CAD tool set built upon the concept of Design-For-Retirement and multi-lifecycle engineering such that designers can use it to estimate the retirement timing and performance/cost ratio of their designs and be guided to reach better designs for multi-lifecycle environmentally conscious products."

18. In regards to Claim 2, Zhou teaches the following limitations:

Claim 2 (Currently Amended): An apparatus according to claim 1, further comprising an environmental impact/cost estimating device configured to estimate an environmental impact and cost based on the life cycle model generated by the modeling device.

(See Zhou, especially: The formulas in Section 2 "Retirement Costs")

19. In regards to Claim 3, Zhou teaches the following limitations:

Claim 3 (Currently Amended): An apparatus according to claim 2, which further comprises a data base configured to store environmental impact information and cost information, the environmental impact information concerning respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and

(See Zhou, especially: Section 3 "Disassembly Analysis")

The Node Information Matrix (NIM) contains this information.

wherein the environmental impact/cost estimating device is further configured to compute the environmental impact and cost of the entire series of multi-generation products based on information generated from the data base and the life cycle model obtained by the modeling device.

(See Zhou, especially: Section 5 "Application to PC Designs")

20. In regards to Claim 4, Zhou teaches the following limitations:

Claim 4 (Currently Amended): An apparatus according to claim 1, further comprising-  
a predicting device configured to predict a supply quantity of  
the first and second objects using the life cycle model generated by the modeling  
device; and

(See Zhou, especially: The formulas in Section 2 "Retirement Costs")

an environmental impact/cost estimating device configured to estimate environmental impact and cost to be burdened in the reuse or recycle from a prediction result obtained by the predicting device.

(See Zhou, especially: The formulas in Section 2 "Retirement Costs")

21. In regards to Claim 9, Zhou teaches the following limitations:

Claim 9 (Currently Amended): An apparatus according to claim 4, which further comprises a data base configured to store environmental impact information and cost information, the environmental impact concerning respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and

(See Zhou, especially: The formulas in Section 2 "Retirement Costs")

wherein the environmental impact/cost estimating device is further configured to compute the environmental impact and cost of the entire series of multi -generation products based on information generated from the data base and the life cycle modeling result caused by the modeling device.

(See Zhou, especially: Section 5 "Application to PC Designs")

22. Claims 11-13, 18, 22-24 and 29 are rejected based on the same reasoning as

claims 1-4 and 9, supra. Claims 11-13 and 18 are method claims reciting the equivalent limitations as are recited in apparatus claims 1-4 and 9 and taught throughout Zhou and Anderi. Claims 22-24 and 29 are computer program claims reciting the equivalent limitations as are recited in apparatus claims 1-4 and 9 and taught throughout Zhou and Anderi.

23. In regards to Claims 10, 19, and 30, neither Zhou nor Andrei expressly teach the exact characteristics of the limitations of the "input screen" / "input window" recited in those claims.

***Response to Arguments***

**Re: Claim Objections**

24. In the previous Office Action, the Examiner indicated that dependent claims 5-8, 14-17, and 25-28 were objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and all intervening claims.
25. The Applicants have decided to cancel all these rather than amend them as indicated by the Examiner. Therefore, the objections to these claims have been withdrawn.

**Re: Double Patenting**

26. Applicants have filed a terminal disclaimer dated 5/16/05 in order to overcome the double patenting rejections involving copending Applications 09/818,612 and 10/323,792. The rejections have therefore been withdrawn.

**Re: 35 USC §103 Rejections**

27. Examiner has applied the same prior art to the amended claims, but has rewritten the rejections so that they are directed to the amended limitations.
28. Moreover, Examiner respectfully disagrees with Applicants' argument (See Amendment filed 5/16/2005, p.20, para.1) that:

Paths representing disassembly sequences, as taught by Zhou, are not lines associated between the first objects and second objects for reusing or recycling them, as claimed by Applicants.

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Zhou expressly teaches (see Zhou, Section 5, Tables 3 and 4 and associated text), that “Using Table 3 and the formulas described in section 2, we can obtain the retirement gain in Table 4.” Zhou therefore teaches that the paths between parts that represent disassembly sequences are directly used to determine whether to reuse or recycle the parts.

### ***Conclusion***

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached at (571) 272-3716.

Any response to this office action should be faxed to (703) 872-9306 or mailed to:

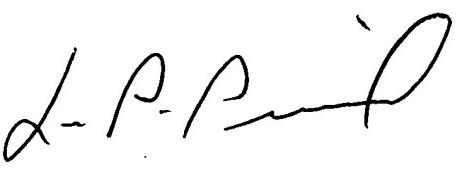
Director of Patents and Trademarks  
Washington, DC 20231

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon

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July 12, 2005

  
LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100